



# STORMWATER STORAGE

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Past and Current Practice in King  
County



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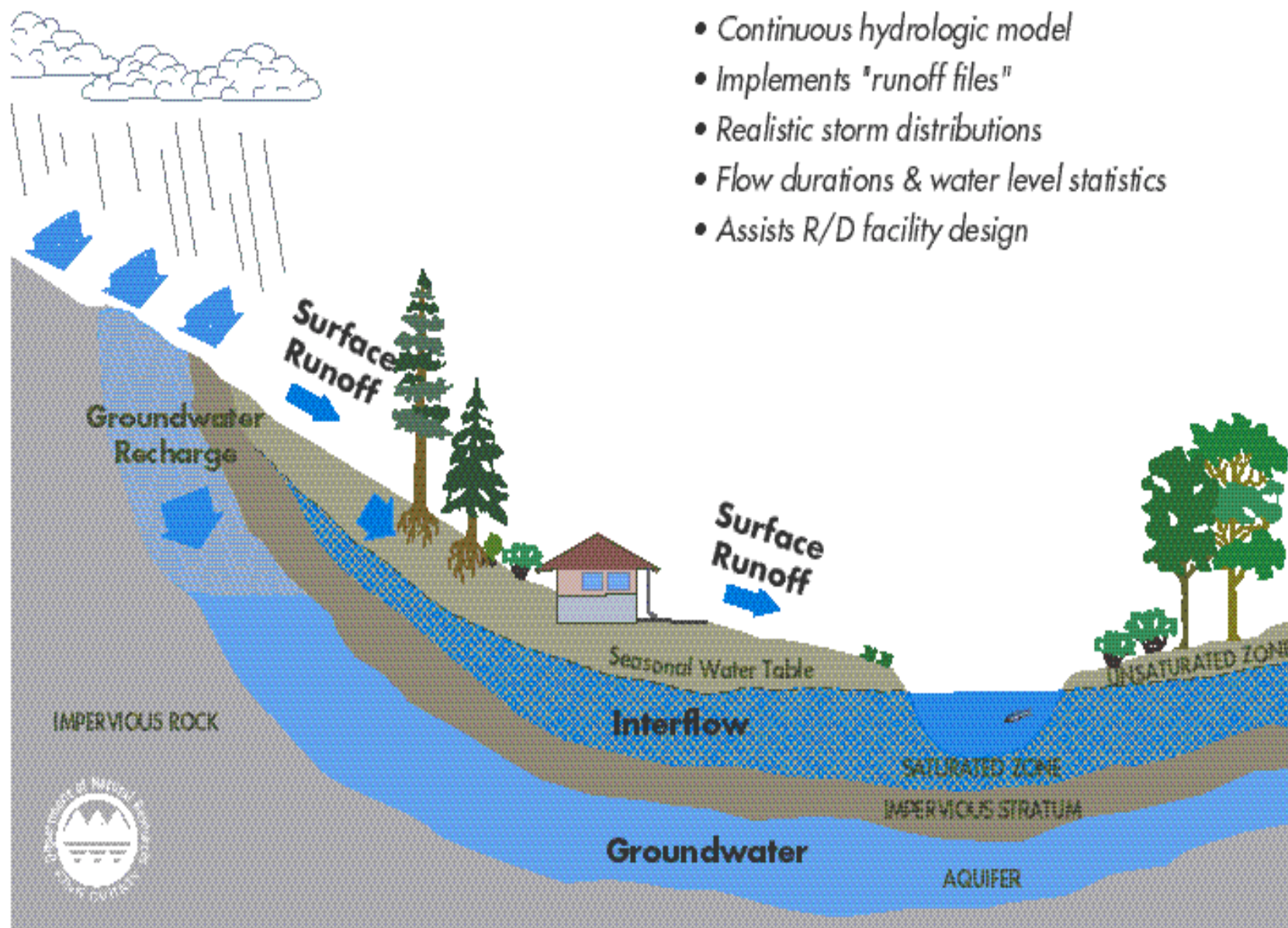
# Why build facilities?

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## King County Runoff Time Series

- Continuous hydrologic model
- Implements "runoff files"
- Realistic storm distributions
- Flow durations & water level statistics
- Assists R/D facility design







Impervious surfaces produce higher  
volumes and faster runoff rates



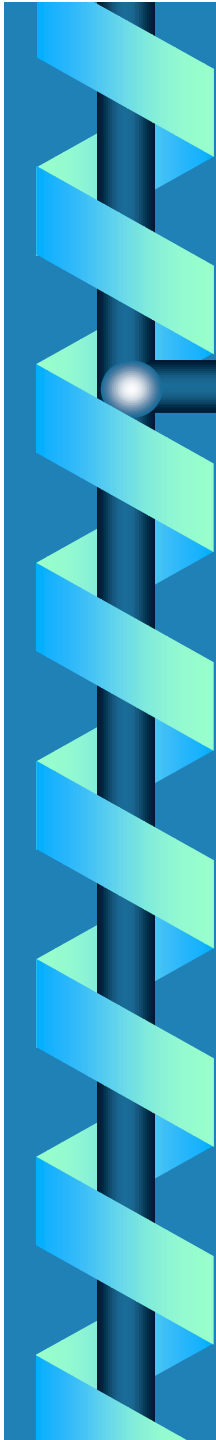


# Control flooding

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# Limit erosion





Limit impacts to aquatic habitat





# Stormwater storage began in King County in 1975

- \* Original designs used "Y & W" method - small ponds, flow control only
- \* 1990 SBUH method introduced - larger ponds, Water Quality ponds introduced
- \* 1998 KCRTS method required - more accurate sizing, larger Water Quality ponds





# Stormwater Facility Types

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- \* Flow Rate Control Types:
  - \* Detention - water is temporarily stored, then slowly released
  - \* Infiltration - water soaks into soil
  - \* Water Quality - “dead storage” - water stays in facility, pollutants settle out
  - \* Facilities may be ponds, tanks or vaults





# Facility Size

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- ✧ Varies with age, downstream constraints
- ✧ New ponds vary from about 4000 to 10000 cubic feet per acre of suburban development
- ✧ Old ponds from about 2000 to 4000 cubic feet per acre
- ✧ Current cost approximately \$5 per cubic foot including land





Stormwater flow control facilities contain  
little water most of time





Stormwater enters ponds during storms,  
then drains out in a few hours or days

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Facilities are designed to fill  
completely only in large  
infrequent events (e.g. 100-year)

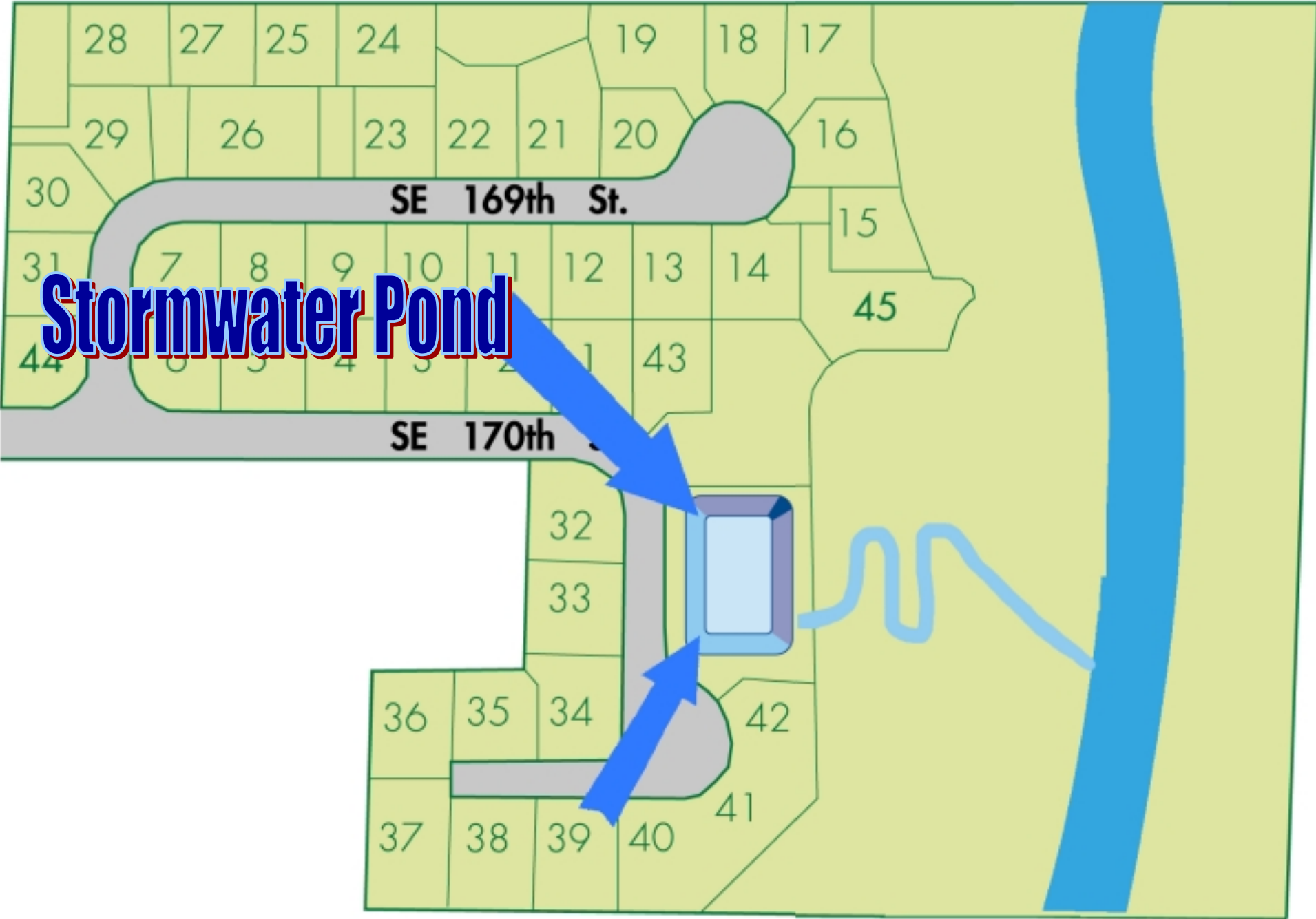


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Water Quality ponds stay full most of year



# Example Subdivision















# Facility Maintenance

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- ✧ King County owns and maintains facilities which serve residential subdivisions
- ✧ Facilities serving commercial and multi-family projects are privately owned and maintained





# Questions?

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